

PATENT COOPERATION TREATY
PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
 (Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P21173WO	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/052828	International filing date (<i>day/month/year</i>) 05.11.2004	Priority date (<i>day/month/year</i>) 07.11.2003
International Patent Classification (IPC) or national classification and IPC C25D5/50		
Applicant ALUMINAL OBERFLÄCHENTECHNIK GMBH & CO. KG		

1.	This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of <u>7</u> sheets, including this cover sheet.
3.	This report is also accompanied by ANNEXES, comprising:
a. <input checked="" type="checkbox"/>	(<i>sent to the applicant and to the International Bureau</i>) a total of <u>3</u> sheets, as follows:
<input checked="" type="checkbox"/>	sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
<input type="checkbox"/>	sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
b. <input type="checkbox"/>	(<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s))
, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).	

4.	This report contains indications relating to the following items:
<input checked="" type="checkbox"/>	Box No. I Basis of the report
<input type="checkbox"/>	Box No. II Priority
<input type="checkbox"/>	Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/>	Box No. IV Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/>	Box No. VI Certain documents cited
<input type="checkbox"/>	Box No. VII Certain defects in the international application
<input type="checkbox"/>	Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-14 _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* 1-15 received by this Authority on 16.03.2006 with letter of 14.03.2006
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY		International application No. PCT/EP2004/052828
Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	
1. Statement		
Novelty (N)	Claims	1-15 YES
	Claims	_____ NO
Inventive step (IS)	Claims	1-15 YES
	Claims	_____ NO
Industrial applicability (IA)	Claims	1-15 YES
	Claims	_____ NO
2. Citations and explanations (Rule 70.7)		
1. Amendments:		
<p>The new claim 1 corresponds to a combination of the originally filed claims 1 and 8.</p> <p>This amendment thus meets the requirements of PCT Article 34 (2) (b) .</p>		
2. Disclosures		
D1:	US-A-4 148 204 (DOTZER RICHARD ET AL) 10 April 1979 (1979-04-10)	
D2:	US-A-4 236 940 (MANTY ET AL) 2 December 1980 (1980-12-02)	
D3:	EP-A-0 184 985 (ELTECH SYSTEMS CORPORATION) 18 June 1986 (1986-06-18)	
D4:	US-A-3 560 274 (HORACE R. OGDEN) 2 February 1971 (1971-02-02)	
D5:	WO 99/38642 A (CLAD METALS LLC; GROLL, WILLIAM, A) 5 August 1999	
D6:	EP-A-0 289 432 (CEGEDUR SOCIETE DE TRANSFORMATION DE L'ALUMINIUM PECHINEY) 2 November 1988 (1988-11-02)	
D7:	DE 36 22 032 A1 (FERDINAND MENRAD GMBH & CO KG) 21	

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
	January 1988
D8:	US-A-3 755 090 (JACKSON A, GB ET AL) 28 August 1973 (1973-08-28)
D9:	US-A-5 196 075 (JANSEN ET AL) 23 March 1993 (1993-03-23)
D10:	US-A-4 655 884 (HILLS ET AL) 7 April 1987 (1987-04-07)
D11:	US-A-5 679 181 (OHMURA ET AL) 21 October 1997 (1997-10-21)
D12:	GB-A-2 188 942 (ROLLS-ROYCE PLC) 14 October 1987 (1987-10-14)
D13:	US-A-3 957 594 (GRELLET ET AL) 18 Mai 1976 (1976-05-18)
D14:	US-A-2 044 742 (ARMSTRONG PERCY A. E. ET AL) 16 June 1936
2.1	Document D1 discloses a process for producing coated workpieces comprising the following steps: galvanic deposition of Al, Cd, In or Zn, i.e. no alloys, and thermal treatment.
2.2	Documents D2 and D4 disclose processes for producing coated titanium or titanium alloy workpieces comprising the following steps: galvanic deposition of chromium, i.e. no alloys, and thermal treatment.
2.3	Document D3 discloses a process for producing coated nickel, cobalt and/or iron workpieces comprising the following steps: galvanic deposition of a titanium-aluminium alloy, and thermal treatment.

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- 2.4 Document D5 discloses a process for producing coated copper, steel, aluminium or titanium workpieces comprising the following steps: galvanic deposition of pure aluminium, i.e. no alloys, and thermal treatment.
- 2.5 Document D6 discloses a process for producing coated aluminium workpieces comprising the following steps: galvanic deposition of nickel, i.e. no alloys, and thermal treatment.
- 2.6 Document D7 discloses a process for producing coated titanium, titanium alloy or niobium workpieces comprising the following steps: galvanic deposition of nickel, i.e. no alloys, and thermal treatment.
- 2.7 Documents D8-D14 do not describe the application of an aluminium-magnesium and/or aluminium-tin alloy to a substrate, and should therefore not be considered relevant.

3. Novelty:

- 3.1 The subject matter of claim 1 is novel under PCT Article 33(1) and 33(2) over the disclosures of D1-D14 because none of the citations discloses a process for producing workpieces with galvanic deposition of an aluminium-tin and/or aluminium-magnesium alloy, as in claim 1.

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- 3.2 Dependent claims 2-13 should also be considered novel.
- 3.3 The workpieces as per claims 14 and 15, which are produced by the process as per claim 1, should also be considered novel.

4. *Inventive step*

- 4.1 Document D1, which is considered to represent the closest prior art, discloses (cf. 1.1) a production process from which the subject matter of claim 1 differs in that an aluminium-tin and/or aluminium-magnesium alloy is galvanically deposited.

The present invention can therefore be considered to address the problem of producing workpieces by a process which achieves higher long-term resistance to thermal stresses, i.e. higher thermal stability against oxidation, in particular in a range from 750°C to 1000°C (paragraph 39 of the application).

These galvanically applied aluminium alloys, which are diffused into the (titanium) substrate, have hitherto not been considered, and the problem could thus not be successfully solved.

For this reason, the subject matter of claim 1 is considered inventive under PCT Article 33(1) and 33(3).

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4.2 The subject matter of dependent claims 2-13 should also be considered inventive.

4.3 The workpiece as per claims 14 and 15, produced by this process, is also considered inventive because it exhibits hitherto unattainable properties, including outstanding long-term resistance to thermal stresses, i.e. resistance to oxidation and other corrosive, high-temperature influences.

5. Additional observations:

The description, in particular pages 4 and 5, should be brought into line with the new claims.